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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,459	08/04/2006	Alfred Hennemann	MERCK-3198	5758
23599	7590	05/20/2009		
MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201				
EXAMINER				
PARVINI, PEGAH				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
05/20/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

### Office Action Summary

**Application No.**

10/588,459

**Applicant(s)**

HENNEMANN ET AL.

**Examiner**

PEGAH PARVINI

**Art Unit**

1793

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 12-15 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5108)
- Paper No(s)/Mail Date 08/04/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-11 (claim 2 was canceled in the reply filed on 3/26/2009) in the reply filed on March 26, 2009 is acknowledged. The traversal is on the ground(s) that PCT rule 13.2 states that notwithstanding the unity of invention requirements, unity of invention will be found where the claims are directed to a product, a process for making the product and a process for using the product; then Applicants state that, thus, restriction should be withdrawn. This is not found persuasive because lack of unity of invention exists when the special technical feature has been taught in the prior art; instantly, the combination of Cacace et al. in view of Schauer et al. teaches the special technical feature as indicated in the previous Office action and also detailed out below.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 4-10, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,533,858 to Cacace et al. in view of U.S. Patent No.

6,686,046 to Schauer et al. and further in view of U.S. Patent No. 4,143,027 to Sollman et al.

Cacace et al. teach colored combination pigments which are based on platy form substrates such as titanium dioxide-coated mica, iron oxide-coated mica or other substrates wherein said substrates are coated with silane coupling agents such as vinyltriacetoxysilane (Abstract; column 2, lines 44-58; column 4, lines 24-60). Cacace et al., also, disclose that compounds such as metal oxides-coated mica pearlescent pigment treated with a hydrolyzed silane coupling agent or mixture of such agents, as known, act as interface between an organic material and an inorganic material to enhance the affinity between the two (column 4, lines 17-23).

Cacace et al., however, is silent to a polymer coating onto the silane.

Schauer et al. teach coating pigment particles with LCST polymers to stabilize the dispersibility of said pigment particles in liquid media, varnishes and the like (Abstract). Schauer et al. disclose that LCST coating on particulate or non-particulate substrates can serve a protective coating for underlying coatings containing UV stabilizers, chromophores or luminiscent components (column 4, lines 17-23), therefore, implying that the LCST coating is applied onto other coatings. Additionally, Schauer et al. make it clear that LCST polymer coating can improve the compatibility of the particles with the vehicle or matrix and that such coating provides additional protection against mechanical damage under shear loads such as occur during extrusion (column 2, lines 10-20). Schauer et al., in addition, discloses that LCST polymers are

particularly suitable for enveloping particles entirely without influencing the color of the particles themselves (column 1, lines 55-60).

Therefore, it would have been obvious to a person of ordinary skill in the art to modify Cacace et al. in order to include a coating of LCST polymer onto the pigment particles of Cacace et al. as that taught by Schauer et al. motivated by the fact that LCST polymer coatings onto pigment particles coating can improve the compatibility of the particles with the vehicle or matrix and that such coating provides additional protection against mechanical damage under shear loads such as occur during extrusion; also, such polymer coatings onto pigments would help to stabilize the dispersibility of pigment particles in the liquid media, varnishes and the like. It is to be noted that the pigments taught by Cacace et al. are based on metal oxides-coated mica pearlescent pigments. Applying LCST polymers onto pigments of Cacace et al. is further motivated by the fact that, as that evidenced by Sollman et al., silanes containing hydrolysable groups are known to be useful coupling agents since they function to tightly join two dissimilar material, one typically inorganic which binds to the Si portion of the silane or its derivative siloxane, the other typically organic which usually covalently, sometimes ionically or through mutual compatibility, bonds to the organofunctional portion of the silane. Sollman et al. further states that one industrial area of the use of silane coupling agents is the use of them in enhancing the reinforcement qualities of select inorganic fillers or pigments incorporated into select organic polymer (Sollman et al., column 1, lines 15-28). Therefore, it is apparent that silane coupling agents are known to bond between pigments and polymers.

With further reference to claim 8, it should be noted that Schauer et al. disclose poly(N-vinylcaprolactam) as a LCST polymer.

With further reference to claim 10, it should be noted that the LCST polymers of Schauer et al. is dissolved in a solvent (i.e. additives) and then is coated on to substrates. It should be noted that since the instant claim does not recite what is considered as an additive in the polymer layer, the solvent into which the polymer is dissolved is seen to read on the limitation of additive.

**Claims 1, 3, 5, 8, and 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,912,283 to Hashizume et al.

Hashizume et al. disclose colored substrate particles which are coated with polymer and then, further, covered with a silane such as N-β-(aminoethyl)-γ-aminopropylmethylmethoxysilane (Abstract; column 6, lines 6-20). The reference also discloses the process of obtained the substrates which are coated with polymer and further coated with silane, specially, in Examples.

With further reference to claim 5, it is noted that Hashizume et al. teach the use of flakes as substrate particles (column 4, lines 52-64).

With further reference to claim 8, it is to be noted that Hashizume et al. disclose that the coating polymer may be synthesized, for example, from the following polymerizable monomers such as styrene, vinyl acetate (column 5, line 54 to column 6, line 5).

With further reference to claim 10, Hashizume et al., in an embodiment, disclose dispersing substrate particles and a red pigment (i.e. additive) in mineral spirit, then mixing it with polymerizable monomers; then, the reference discloses that after mixing, stirring and heating under specific conditions, the polymer and the pigment are coated onto the substrate (column 15, lines 14-30). Therefore, since the instant claim is silent as to what is the additive in the polymer coating layer, the fact that instant reference discloses the use of pigment as well as polymer in a mixture which is coated onto the substrate, to be later coated with silane as detailed above, is seen to read on the limitation of instant claim 10.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashizume et al. in view of U.S. Patent No. 6,030,442 to Kabra et al.

Hashizume et al. disclose colored substrate particles coated with polymers made up of monomers such as styrene and vinyl acetate upon which a coating of silane is applied as detailed out above.

Although Hashizume et al. do not expressly disclose that polymers made up of such monomers are LCST polymers, monomers of vinyl acetate is known to have been able to produce LCST polymers as that evidenced by Kabra et al. (column 12, lines 47-48) which disclose that suitable synthetic polymers with LCST in aqueous solutions include vinyl acetate along with another monomer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pegah Parvini/  
Examiner, Art Unit 1793

/Michael A Marcheschi/  
Primary Examiner, Art Unit 1793